

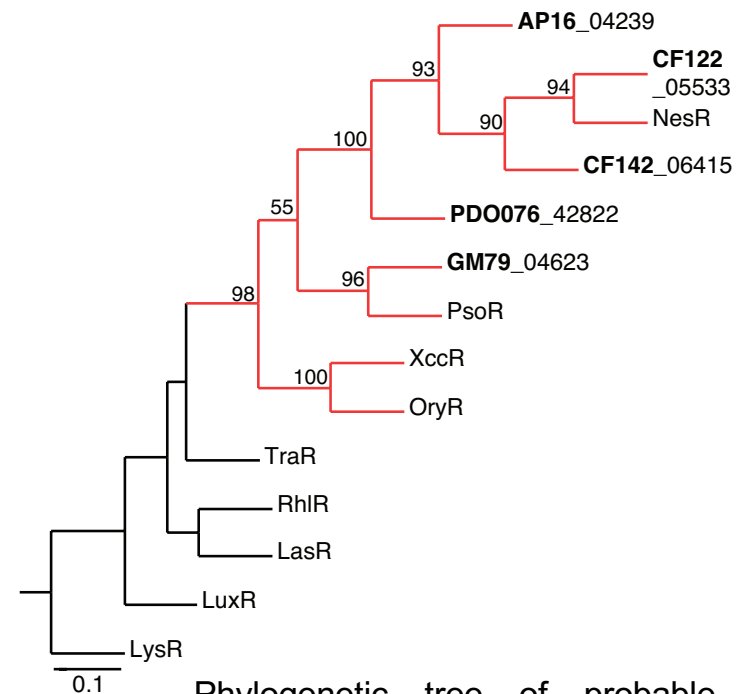
LuxR- and LuxI-type quorum sensing circuits are prevalent in members of the *Populus deltooides* microbiome

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Contact: E. Peter Greenberg 206-616-2881 epgreen@uw.edu

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- Acyl-homoserine lactone (AHL) quorum-sensing (QS) controls cell density-dependent gene regulation. LuxI-family members synthesize AHL signals, LuxR-family members are AHL-controlled transcriptional regulators.
- 129 bacteria isolated from *P. deltooides* were surveyed for AHL signal production and a large portion (40%) were AHL-positive.
- Among the 39 Proteobacteria genomes sequenced by the PMI, AHL QS genes are prevalent: 18 *luxI* and 72 *luxR* homologs.
- A sub-family of LuxR-type regulators, thought to respond to plant-derived signals and not bacterial AHLs, was present in five isolates (*Rhizobium* and *Pseudomonas* sp.).
- The prevalence of AHL cell-to-cell communication in *Populus*' microbiota has been revealed and we are now poised to understand its role in the biology of *Populus*.



Phylogenetic tree of probable plant-responsive LuxR family members (red lines) from five *Populus* bacterial isolates (bold lettering).